

Estate Rust-op-Twist, Steam Engine and Cane Mill    HAER No. VI-3  
Northside Quarter  
St. Croix  
Virgin Islands

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1-NORT,  
1-A-

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*Addendum to*

Estate Rust-Op-Twist:

Steam Engine & Cane Mill

Christiansted

St. Croix

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

ADDENDUM  
FOLLOWS

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ESTATE RUST-OP-TWIST, STEAM ENGINE AND CANE MILL  
HAER No. VI-3 (Page 1)

HISTORIC AMERICAN ENGINEERING RECORD

ESTATE RUST-OP-TWIST, STEAM ENGINE AND CANE MILL  
HAER VI-3

Location: Northside Quarter, adjacent to the Caribbean Sea,  
St. Croix, Virgin Islands

Dates of Construction: Sugar estate, c. 1755; steam mill 1851

Original Owner: Johann Uytendahl

Present Owners: Mr. and Mrs. George Dyer (leased to University of  
Texas Marine Research Institute)

Significance: Rust-op-Twist's long and troubled history as a  
sugar producing estate is typical of many other  
St. Croix plantations. An animal mill, a  
windmill, and a steam mill - representative of  
the evolution of sugar cane technology - remain  
today on the estate.

Current Condition: Steam mill virtually intact; other mills lack  
grinding apparatus. The factory and associated  
buildings have been extensively altered for other  
purposes in recent times.

Present Use: University of Texas Marine Research Institute  
(warehouse, laboratories, housing)

Historian: John C. Rumm

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"RUST-OP-TWIST," TRANSLATES FROM THE DUTCH AS "REST AFTER STRUGGLE, TOIL OR STRIFE." [1] IT IS AN APT NAME FOR AN ESTATE MARKED BY TUMULT DURING ITS 130 YEARS OF SUGAR PRODUCTION, WHICH ENDED ABOUT 1880. THE HISTORY OF ESTATE RUST-OP-TWIST REFLECTS THE GRADUAL DISINTEGRATION OF THE ONCE-PROSPEROUS ST. CROIX SUGAR INDUSTRY.

SURVIVING FEATURES AT RUST-OP-TWIST, WHICH IS LOCATED ON THE NORTH COAST OF ST. CROIX, INCLUDE A FAIRLY INTACT STEAM ENGINE AND SUGAR CANE CRUSHER, A WINDMILL, AND AN ANIMAL MILL. THE RUINS OF THE ORIGINAL FACTORY BUILDING HAVE BEEN COMPLETELY REBUILT IN MODERN TIMES AND PRESENTLY SERVE AS LABORATORIES AND WAREHOUSES FOR THE ST. CROIX MARINE STATION, OPERATED BY THE UNIVERSITY OF TEXAS MARINE SCIENCE INSTITUTE. OTHER SURVIVING STRUCTURES, INCLUDING SLAVE QUARTERS AND THE ESTATE OVERSEER'S HOUSE, HAVE ALSO BEEN EXTENSIVELY REBUILT FOR CONTEMPORARY HOUSING.

Northside Quarter B., one of the nine districts demarcated by the Danish West India-Guinea Company's survey of St. Croix in the 1730s and 1740s, remained largely unsettled through 1750. "Nicolai Tuit and Company" purchased seven plantations in the quarter during 1751, including estates 5 and 6 in its northeast corner. [2] These two estates, which measured somewhat larger (200 acres vs. 150 acres) than most other plantations, were situated in a valley ringed by 5 hills (one of which later became known as "Rust-op-twist Hill"). [3]

Tax records from 1751 to 1755, and a St. Croix map dated 1754 [4] indicate that Tuit and Company did not cultivate their estates during this period. The Danish Government decreed, in 1755, that any uncultivated St. Croix plantations being held solely for land investment purposes would henceforth be confiscated. It is uncertain that such was the fate of Tuit and Company's holdings, but records show that their estates were patented in 1757 to Johann Balthazar Uytendaal. [5]

Uytendaal resided on St. Thomas island, some 40 miles northwest of St. Croix. The absentee landowner left a foreman to manage his St. Croix plantations. He paid taxes on 16 slaves in 1759, and by 1765 he had increased this force to 30 slaves. A map dated 1766 [6] lists Uytendaal and Larrens Bddkins (presumably his foreman) in connection with estates 5 and 6 in Northside Quarter B, and also depicts an animal mill on the property. It is presumably this same animal mill which remains today at Rust-op-Twist. The circular stone wall, roughly four feet high and three feet wide, is approximately 100 yards east of the

present warehouse containing the steam engine. The actual milling apparatus is missing, but its prior location is marked by a raised hump in the ground roughly in the center of the mill-ring.

The number of slaves on Uytendaal's estates continued to increase, totaling 87 in 1769, "more than anyone else in that quarter," [7] and reaching 158 four years later. This figure fell, however, to 84 slaves in 1780, three years after two of Uytendaal's sons, Paulus and Joseph, began operating the estates. A third son, Lucas, joined his brothers (listed as "resident owners") in 1786.

By this time, the Uytendaals, faced severe financial problems resulting from a loan Johann Balthazar Uytendaal had negotiated in 1769 from a Dutch lending firm. Several St. Croix estate owners took out loans in the 1760s "to build new factories and to buy more slaves." [8] Dutch investment companies handled most of these loans, and when the firms went bankrupt in the late 1700s, financial difficulties resulted for the estate owners. When the Danish Government assumed control over the current accounts of several bankrupt Dutch lending companies in 1785, the Uytendaal loan debt stood at 124,872 Dutch florins. By 1793 this amount had grown to 203,142 florins, and by court proclamation the Uytendaals surrendered their estates and their 125 slaves to a trust. An attorney, known only as Coppy, administered these lands until 1796, when Lucas Uytendaal became their owner with 158 slaves.

Oxholm's map of St. Croix [9] prepared about 1799, refers to plantations 5 and 6 as a single estate named "Rust-on-Twist." [10] This map also indicates a windmill on the estate. (The 1769 Uytendaal loan may have been taken out to build this structure.) The windmill tower survives today and is located approximately 30 yards beyond and to the northeast of the animal mill. No machinery remains in the windmill. [11]

The debt outstanding on Rust-op-Twist remained at 201,607 florins when Hans Winding and William Woods became the estate owners in 1800. Their plantation totaled 420 acres, 200 of them cultivated in sugar cane, and they owned 156 taxable slaves. [12] An additional 100 acres planted in sugar cane in 1804 increased the estate land tax to 340 rigsdalers, "the largest amount paid in that quarter." [13] Winding assumed sole ownership in 1805 and maintained it until his death in 1812, when his heirs received the estate.

Sugar cane acreage at Rust-op-Twist declined from 300 acres in 1804 to only 190 acres in 1816. During these 12 years, the number of slaves also declined to 112. [14] The old debt on the estate had now become related to the debt on Estate Cassova (Cassave Garden). The 1820s, heralding the commencement of the great sugar industry decline

which lasted through the century, brought droughts, slumping sugar prices, and other economic hardships to St. Croix planters.

The Winding heirs clung gamely to Rust-op-Twist until 1834, when they sold the estate to Nicolai Jurgenson for 190,832.17 florins. [15] Jurgenson produced some 189,585 net lbs. of sugar for export in 1840, and in late November of that year he sold the estate to Count Adam Moltke for Ps 74,000. Count Moltke held the estate, of which 120 acres remained in sugar cultivation, and its 100 slaves, until 1849, or a year after the slave emancipation by the St. Croix governor. The Royal West Indies Loan Commission again purchased Rust-op-Twist for Ps 74,000.

Rust-op-Twist remained under the Commission's control for six years. An auction notice for "Sugar Estate Rust-op-Twist" appeared in the St. Croix Avis in 1850, stating: "The Estate contains 415 acres of land, of which 115 acres are in sugar cultivation, a complete set of works with inventory, sufficient stock and an ample natural supply of water." [18]

In an effort to bolster the existing sugar-works facilities at Rust-op-Twist, "Westiholz and Company" (probably a purchasing agent, for the Loan Commission) ordered a steam engine and mill from the McOnie and Mirrlees Company in Glasgow, Scotland on 29 October 1850. [19] Described as a "classic example of the foundry or cast-iron age of engine-building," [20] the single-column beam engine remained in very good condition at the estate in 1977. It was missing only a few parts, including portions of the valve gear and the bearing cap for the intermediate gear. Its major features are a cast-iron, non-counterweighted crank arm; a 2-ball Watt-type governor with slotted arc guides and restraints; a D slide valve, and a "pump rod of apparent blacksmith origin." A fly-wheel, formed of wrought-iron spokes and cast-iron hub and rim, measures 10 feet in diameter with a 4-1/2-inch face. The engine's 12-1/2-inch cylinder bore and 24-inch piston stroke "probably delivered approximately 20 horsepower." [21] Its two reduction gears, with a reduction-ratio of 12"1, run on shafts supported in two-piece brass box bearings, and the engine itself sits on a box base mounted on stone.

A single roller, measuring 21 inches in diameter and 42 inches long, remains in place on the cane-crushing unit. When operative, the three rollers probably rotated at about 1-1/2 to 2 revolutions per minute. The mill had a capacity of "approximately 5 tons of cane per hour requiring about 15 horsepower with a normal feed of cane." [22]

Although many of the ruins from the original factory building have been altered and rebuilt in recent times, the surviving masonry implies that this structure was designed in the standard T-form described by

Oxholm. Stone archways, located in the ruins next to the west wall of the present-day warehouse where the steam engine stands, apparently served the sugar-works room containing the coppers and clarifiers. Based upon this assumption, the factory building would have been situated with the T-stem (sugar-works room) oriented north and south, and with the T-head (rum and storage rooms) oriented east and west. None of the sugar-works apparatus from this factory survives. The placement of the steam engine, a later addition, varies from other Virgin Islands sites surveyed, [23] in that the engine was housed in the T-stem sugar-works room rather than in a separate room. The boiler which supplied steam to the engine is missing.

Sugar production figures for Rust-op-Twist reveal that the quantity of sugar exported from the factory increased from 42,336 net pounds in 1850 (before the steam engine and mill addition) to 144,861 net pounds in 1855. [24] By 1855 H. Nelthropp (or Nelthorpe) owned the estate, which then had 120 acres in sugar cultivation and 300 acres in other crops. [25] A drought in 1856 caused sugar production figures at Rust-op-Twist to plummet to 59,886 net pounds in 1857. [26]

The final twenty years of active sugar production at Estate Rust-op-Twist provided its most turbulent period. Figures for 1862 show that the area in sugar cultivation had fallen to 100 acres, and Nelthropp employed 42 workers. [27] Sugar production expressed in hogsheads (1 hogshead = 1,500 pounds of sugar) had averaged 78 hogsheads in the period 1815-1861. [28] In 1862 only 39 hogsheads were produced. [29] The output figures for the next 10 years vary from a peak of 75,671 pounds and 50 hogsheads of sugar produced in 1816, to a low of 22,425 pounds and 15 hogsheads of sugar in 1869. [30]

The St. Croix sugar industry at this time was suffering from the hurricanes and earthquakes; severe and prolonged droughts; outbreaks of cholera and other epidemics; and from continued economic hardships, such as a declining labor market, low sugar prices and competition from the beet sugar industry. Many planters simply abandoned their estates or went bankrupt. Ownership records for Rust-op-Twist are missing for the period from 1862 (when Nelthropp was still listed as the owner) to 1873, but in 1874 Julius Arendrup received the estate.

Sugar production in 1876 at Rust-op-Twist, in the midst of the most severe drought on St. Croix in the 19th century, fell to 16,205 pounds, or 11 hogsheads. Only 90 acres remained in sugar cultivation. These figures fell to their lowest level in 1877, when only 15,405 pounds (10 hogsheads) were turned out at the estate. [31] During the period 1874-1878, the Danish government granted short-term loans to stricken planters, and Arendrup received aid for his estate. [32] Fac-

tors such as "the costly carriage of produce to the port of Christiansted, combined with falling prices," had made it nearly "impossible to continue the profitable cultivation of the property." [33]

The final stroke for Arendrup and Estate Rust-op-Twist came in 1878 during the St. Croix "Great Burn" and labor riot. According to the St. Croix Avis: "Mr. Arendrup, his wife and little daughter, taking refuge from the worst evils among the bushes on the hillside, had the pain of seeing their residence and the works burnt to the ground." [34] Although the steam machinery survived, little else remained. In June 1879 a notice appeared in the St. Croix Avis announcing, "at the request of Christiansted's Dealing Court as administering the Bankrupt Dealing of Mr. Julius Arendrup," that "Rust up Twist" would be put up for auction. [35]

Sugar was produced on the estate in 1880, but with 29 acres under cultivation, only 5,643 pounds (4 hogsheads) resulted. [36] From 1862 to 1880, sugar production at Rust-op-Twist averaged only 28 hogsheads annually. [37] Acreage under sugar cultivation averaged 99 acres during the same period. Rust-op-Twist operated in 1881 under the control of Estate La Vallee, but this estate, also suffering severe hardships, ceased operations in 1882. [38]

Although Rust-op-Twist never produced sugar again after 1881, it was considered for other crop cultivations. Several Danish businessmen, anxious to ease the financial plight of St. Croix, formed a "Danish Plantation Company" and planned "to make agricultural improvements and to experiment with other cultivation that might prove more successful than sugar cane." [39] This company purchased ten estates, including Rust-op-Twist, which "were in such a down-at-the-heel condition" that their owner, Thomas Kirk, "could not raise cattle successfully, much less cane." [40] It is not known how the Danish Plantation Company's venture fared.

Since 1948 Rust-op-Twist has remained in private ownership, and the present owners, Mr. and Mrs. George Dyer, have leased the property to the University of Texas Marine Research Institute. As of this writing (1977) the St. Croix Landmarks Society hopes to purchase the remaining steam mill and restore it to working condition.



NOTES

<sup>1</sup>James McGuire, Geographical Dictionary of the Virgin Islands of the United States, (Washington: Government Printing Office, 1925), pp. 161-162. McGuire further notes that the name "Rust-op-Twist" has been variously rendered as "Rust on Twist," "Rust up Twist," "Rusty Twist," and "Rustup Twist." These variations are represented in the text of this paper as they were given in the original work.

<sup>2</sup>General Services Administration Reference Service Report, "The Owners and the Estate of "Rust op Twist in St. Croix," Margareth Jorgensen, 1953, p. 2. Henceforth cited as "GSA Report." Unless otherwise cited, the pre-1850 history for Rust-op-Twist is taken from this source.

<sup>3</sup>McGuire, p. 162.

<sup>4</sup>Beck 1754 St. Croix Map; reproduction in St. Thomas Public Library, Charlotte Amalie, St. Thomas.

<sup>5</sup>McGuire (p. 161) notes that Oldendorp (1777) referred to these estates as "Vitendaals Plantage." The GSA report variously gives this name as "Uytendaale," "Uytendahl," and "Uytendael." Uytendaal and his sons later were made "Barons von Bretton" by the Danish monarchy.

<sup>6</sup>Waldemar Westergaard, "A St. Croix Map of 1766: With A Note on its Significance in West Indian Plantation Economy," Journal of Negro History. Microfilm reprint in St. Thomas Public Library.

<sup>7</sup>GSA Report, p. 2.

<sup>8</sup>Florence Lewisohn, St. Croix under Seven Flags, (Hollywood, Florida: Dukane Press, 1970), p. 113.

<sup>9</sup>Reproduction at St. Thomas Public Library.

<sup>10</sup>Oxholm's corruption of the Dutch "Rust-op-Twist" implies that the name for this estate had come into use some time earlier.

<sup>11</sup>"There is a contemporary print showing one of the rare old water mills on St. Croix ... [p]ossibly a [water mill] was at Rust-op-Twist where there are the remains of an old sluiceway." Lewisohn, p. 129. The Henry Morton Sketchbook, illustrating scenes in 1840's St. Croix,

also indicates that there may have been a water mill at this estate. This would be very interesting if correct, since a water mill in the St. Croix climate would be an unusual and a bold exploit. The author of this narrative, accompanied by David Hayes from the St. Croix Landmarks Society, could find no trace of a water mill during an onsite investigation of Rust-op-Twist in July 1977.

<sup>12</sup>By this time a distinction had been made between "taxable slaves" - those fit for work - and "non-taxable slaves" - elderly slaves, infants, or children, and women. (GSA Report, p. 3.)

<sup>13</sup>GSA Report, p. 3.

<sup>14</sup>Statistics Regarding Properties in the Island of Saint Croix, 1816-1857 (n.a., n.d.), microfilm file, St. Croix Public Library, Christiansted. Entry listed as "Rust up Twist."

<sup>15</sup>Ibid. Hereafter abbreviated "SRP."

<sup>16</sup>SRP, "Table of Quantity of Sugar Shipped from 1835 to 1840 and 1850-57 in Nett Lbs.," under entry "Rust up Twist." Hereafter abbreviated "SRP-table."

<sup>17</sup>SRP.

<sup>18</sup>St. Croix Avis, 13 May 1850.

<sup>19</sup>Letter from I. Carmichael, Sales Manager for the Mirrlees Watson Company Ltd., to Marcus D. Wright III, regarding Mr. Wright's request for information concerning the steam mill at Rust-op-Twist. Hereafter abbreviated "Carmichael letter." Photocopy supplied by David Hayes.

<sup>20</sup>HAER Inventory for "Estate Rust-Up-Twist: Sugar Mill Engine" (n.a. but believed to be Robert L. Johnson, n.d.)

<sup>21</sup>Carmichael letter.

<sup>22</sup>Ibid.

<sup>23</sup>Estate Clifton Hill, also on St. Croix, and Estate Reef Bay on St. John, both part of the HAER Virgin Islands Survey in the summer of 1977.

<sup>24</sup>SRP-table.

<sup>25</sup>Ibid.

<sup>26</sup>Ibid.

<sup>27</sup>Pocket Almanac for 1863, (St. Croix, 1863). The workers, classified according to 1849 Labor Act standards, included: field laborers: 17 first class, 5 second class, 10 third class; non-field laborers: 7 first class, 0 second, third classes. There were also 4 domestic servants, 4 tradesmen, and 1 fisherman. Stock included 10 horses, 1 ass, and 50 horned cattle.

<sup>28</sup>Statistics Concerning Sugar Production in St. Croix from 1862-1889, table V: "Statement of the sugar estates, area, and average crops from 1815-1861, from 1862-1889, and from 1880-1889," entry for "Rust-op-Twist." Main source hereafter abbreviated "SCS-table X."

<sup>29</sup>SCS-table VIII: "Statement of the Annual Sugar Production on the estates," entry for "Rust-op-Twist."

<sup>30</sup>Ibid.

<sup>31</sup>Ibid.

<sup>32</sup>GSA Report, p. 4.

<sup>33</sup>St. Croix Avis, 17 April 1912, (obituary notice for Julius Arendrup).

<sup>34</sup>Ibid.

<sup>35</sup>St. Croix Avis, 11 June 1879.

<sup>36</sup>SCS-table VIII.

<sup>37</sup>SCS-table V.

<sup>38</sup>Ibid.

<sup>39</sup>Irene Armstrong, Robert Sheoch: Cruzan Planter, (1971), pp. 83-84.

<sup>40</sup>Ibid.

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